

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 10/18/2011 has been entered.

Response to Arguments

Applicant's arguments, filed on 10/18/2011, with respect to the rejection(s) of claim(s) 1-6 have been fully considered and are persuasive. Therefore, the rejection of said claims has been withdrawn.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Paul Fournier on 10/21/2011

Claims 1 and 6 are amended as follows:

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Claim 1 (Currently Amended): A photodetector comprising: a substrate; a photodetecting element array, having a plurality of photodetecting elements formed in a predetermined array on the substrate; a light entrance portion, being used to make light enter, the light to be detected by the photodetecting elements ~~enter,~~ and said light entrance portion including an opening formed in the substrate in a predetermined positional relationship with respect to the photodetecting element array; and a carrier capturing portion, being disposed between the photodetecting element array and the light entrance portion, capturing carriers generated when light is illuminated onto a substrate portion near the light entrance portion, and removing the carriers to the exterior, wherein the substrate is formed of semiconductor material, the photodetecting element array is a photodiode array, the photodetecting elements are photodiodes, and the opening passes through from an upper surface of the substrate to a lower surface of the substrate.

Claim 6 (Currently Amended): A spectrometer comprising: a photodetector comprising: a substrate; a photodetecting element array, having a plurality of photodetecting elements formed in a predetermined array on the substrate; a light entrance portion, being used to make light enter, the light to be detected by the photodetecting elements, ~~enter~~ and said light entrance portion including an opening formed in the substrate in a predetermined positional relationship with respect to the photodetecting element array; and a carrier capturing portion, being disposed between the photodetecting element array and the light entrance portion, capturing carriers

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generated when light is illuminated onto a substrate portion near the light entrance portion, and removing the carriers to the exterior, wherein the substrate is formed of semiconductor material, the photodetecting element array is a photodiode array, the photodetecting elements are photodiodes, and the opening passes through from an upper surface of the substrate to a lower surface of the substrate the photodetector; and a spectroscopic optical system, including a dispersive element positioned with respect to the photodetector at a predetermined position along an optical path from the light entrance portion to the photodetecting element array; and wherein light entering from the light entrance portion is spectrally separated by the dispersive element and the spectral components obtained are detected by each of the plurality of photodetecting elements of the photodetecting element array.

Allowable Subject Matter

Claims 1-6 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a photodetector comprising: a substrate; a photodetecting element array, having a plurality of photodetecting elements formed in a predetermined array on the substrate; a light entrance portion being used to make light enter, the light to be detected by the photodetecting elements; and said light entrance portion including an opening formed in the substrate in a predetermined positional relationship with respect to the photodetecting element array; and a carrier capturing portion, being disposed between the photodetecting element array and the light entrance portion,

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capturing carriers generated when light is illuminated onto a substrate portion near the light entrance portion, and removing the carriers to the exterior, wherein the substrate is formed of semiconductor material, the photodetecting element array is a photodiode array, and the opening passes through from an upper surface of the substrate to a lower surface of the substrate, in combination with the rest of the limitations of the claim.

Claims 2- 5 are allowed by the virtue of dependency on the allowed claim 1.

As to claim 6, the prior art of record, taken alone or in combination, fails to disclose or render obvious a spectrometer comprising: a photodetector comprising: a substrate; a photodetecting element array, having a plurality of photodetecting elements formed in a predetermined array on the substrate; a light entrance portion being used to make light enter, the light to be detected by the photodetecting elements, and said light entrance portion including an opening formed in the substrate in a predetermined positional relationship with respect to the photodetecting element array; and a carrier capturing portion, being disposed between the photodetecting element array and the light entrance portion, capturing carriers generated when light is illuminated onto a substrate portion near the light entrance portion, and removing the carriers to the exterior, wherein the substrate is formed of semiconductor material, the photodetecting element array is a photodiode array, the photodetecting elements are photodiodes, and the opening passes through from an upper surface of the substrate to a lower surface of the substrate the photodetector; and a spectroscopic optical system, including a dispersive element positioned with respect to the photodetector at a predetermined

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position along an optical path from the light entrance portion to the photodetecting element array, in combination with the rest of the limitations of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullahi Nur whose telephone number is **571 270 1298**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury, can be reached on **571 272 2287**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A.N./

Abdullahi Nur

Patent Examiner,

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/TARIFUR CHOWDHURY/

Supervisory Patent Examiner, Art Unit 2886

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